THE PRECEDENT CAUSE

OF

RICKETS.

BY

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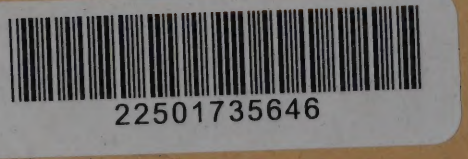

16 Cavendish Square. W.
25 Jan. 1890

Dear Dr. Robert Lee

I have received the Copy which you have been kind enough to send me of your very able interesting and suggestive Essay on the Precedent cause of Rickets. It reminds me of the best manner of Halford and of Holland and I am much obliged to you for your consideration

Believe me Yours faithfully
(Signed) Andrew Clark.

THE prevalence of Rickets in this country is a matter deserving serious attention; and the fact that it occurs among all classes of the People is evidence that it is not due, as is generally supposed, to insufficient or improper food.

Long and extensive clinical observations have satisfied me that our views on this subject require alteration, and that when they are corrected the existing prevalence of the malady will be greatly diminished.

Most of the cases which illustrate the following remarks were distinct examples of Rickets, and were not like the majority of cases which occur in ordinary private and hospital practice, where deformities are only just beginning to appear.

I find in my hospital practice that more than 3,000 cases have passed under my care, and there exists no difficulty for any one to test the accuracy of my conclusions.

R. J. L.

ON THE

PRECEDENT CAUSE OF RICKETS.

By ROBERT J. LEE, M.A., M.D.Camb., F.R.C.P.

In the seventeenth chapter of Dr. Glisson's treatise on Rickets* he discusses the question of those "precedent diseases which may be the cause of this disease . . . . because they leave it behind them as one of their effects." Consistently with his theory of the primary essence of rickets, Glisson admitted into his catalogue of precedent causes almost every form of disease; though it is evident that he did so, in the case of several of them, rather for theoretical than for clinical reasons. The explanation given by Glisson for the prevalence of rickets in his own time contrasts seriously with the ideas of the present day. Wealth, luxury, and idleness were, in his opinion, chiefly responsible for the malady; while we are inclined to attribute it to influences of an opposite character—to want of proper food, want of pure air, and generally to insanitary conditions more or less unpreventable in large and crowded cities. From his list of precedent causes Glisson excludes those diseases or tendencies which are transmitted from parents to their offspring—notably scrofula, tuberculosis, and syphilis. On these points

* Translation, printed by Cole, 1681.

his views accord with those in general acceptance at the present time. He also excludes the possible effects of peculiarities of climate and locality, and devotes separate and particular attention to them. Without denying possible influences in the causation of rickets to each of these two classes of morbid agents, we may fairly ask the question whether in every case of rickets it is possible to discover a precedent cause, which, as it were, intervenes between remote conditions and the distinct evolution of the rickety signs and symptoms. This is the question which I propose to consider. It is almost unnecessary to state that the answers to it depend entirely on clinical observation, and we must not be surprised if there are considerable differences in them.

After a careful consideration of Glisson's views on this point, I am inclined to think that if the question had been put to him, "Have you ever seen rickets develop without a precedent cause?" he would have replied that he had rarely seen such an occurrence. Possibly he might have gone so far as to say that in every case there was a precedent cause, though it might be difficult to discover it. He would certainly have denied that such influences as parental tendencies or peculiarities of locality or climate could of themselves produce the disease. Such, at least, is the conclusion one would arrive at from the arguments and statements contained in his treatise. To those who would agree with Glisson that it is generally true that rickets are the consequence of some distinct form of illness, it would be reasonable to put the question, "Is there, then, any particular form of disease which is, more frequently than others, a precedent cause?"—and this question would be the more proper as it bears directly on the subject of treatment.

Now the reason why it is difficult for us to determine this question

of precedent cause is that we are not required professionally to advise in cases of rickets until the symptoms are fairly well developed. We have, then, only present conditions and the reports of parents or nurses to guide us to any conjectures we may form of the disturbing influences which have possibly been more or less active in the causation of the rickety condition. It is in such cases difficult, if not impossible, to discern clearly between causes and effects, and this the more so because the reports given of the past histories of the cases are often misleading, and we may be induced to think little of what may really have been of great importance. So far as information is afforded by the statistical method of inquiry, I think it will be found that the precedent cause which most constantly recurs in the histories of cases of rickets is some form of pulmonary disturbance, generally indicated by the term "bronchitis," or in common language by terms suggesting a difficulty of respiration, such as "cough," "hard breathing," or such-like. And consistently with such reports we generally find that present clinical symptoms are chiefly those of some form of pulmonary disorder indicated by râles, ronchi, crepitation, or some other sign of morbid condition; and this, too, of such a character as to lead to the inference that it has existed for some length of time, and may therefore be fairly regarded as having played a more or less important part as a causative agent.

But the cases of most value to this inquiry are those where the children have been under observation during the period of the evolution of the rickets, and it is from the study of such cases that I have been led to think that rickets is a disease which is due principally, if not entirely, to any cause which interferes with the functions of respiration, and that the precedent cause of rickets is generally some form of pulmonary inflammation, such as bronchitis, broncho-pneumonia,

or pneumonia. The occurrence of rickets after whooping-cough or measles will be found, I think, to depend chiefly, if not entirely, on the question whether there has been any pulmonary complication or not. It is also a matter of common observation that children in this country suffer from troubles of respiration after the subsidence of an acute pulmonary disorder, this chronic condition being characterised clinically by Intercostal Retrocession, and by certain morbid signs preferentially occurring in the basic portions of the lungs. And because the examination of very young children is somewhat difficult in respect to the exact determination of the latter class of pulmonary disorders, I am inclined to think that we may judge of the extent to which proper pulmonary expansion is affected better by observation of the extent of intercostal retrocession than by the usual methods of auscultation and percussion. For if it be admitted, as probably will be the case, that the imperfect or insufficient expansion of the lungs is the determinant of intercostal retrocession, and that the one stands related to the other in direct proportion, it can be seen by a superficial examination of the thorax whether there is some pulmonary defect or not; and, speaking from personal experience, I am inclined to attach great value to this particular sign in the examination of rickety children. I have appended to these remarks a short table of fifty cases of rickets, selected from my note books without preference, except for their being well-marked cases of the disease. It would have been easy to have given the columns containing details of parental antecedents, of the nature of the nourishment of these children, the state of dentition, and other information of more or less clinical and general interest, but I have refrained from doing so, as there was no conclusion of any importance to be drawn from them which has not already been clearly established.

TABLE OF FIFTY CASES OF RICKETS.

No. of Case.	Age.	Present conditions.	Precedent cause.
1	2 years.	Wrists swollen; abdomen distended; spleen and liver palpable; crepitation with inspiration at right base.	Bronchitis when 6 months old, lasting 6 months; then improved, but subject to colds since.
2	11 months.	Tenderness of body; perspiration of head; wrists enlarged; abdomen prominent; no enlargement of liver or spleen; chest constricted and full of wheezing sounds; want of resonance at both bases.	No illness till about 1 month ago, when there were "cough and bronchitis."
3	$1\frac{3}{4}$ year.	Large head; body tender; terminals of bones enlarged; liver and spleen natural; noisy breathing all over chest; deficient resonance at both bases, especially the left.	Mother states that the child has never had cough or bronchitis, but that twelve months ago it had a cold and "wheezing on the chest."
4	$3\frac{3}{5}$ year.	General tenderness; tibiæ curved; terminals enlarged; liver and spleen large; noisy breathing; bubbling râles, at both bases especially.	Bronchitis when 4 months old; subject to colds since; whooping-cough 2 months ago.
5	$1\frac{1}{2}$ year.	General well marked rickets; noisy râles general; deficient resonance of lower two-thirds of chest.	Perfect health till 5 months ago, when there were measles, and bronchitis. Respiration 62.
6	$1\frac{3}{4}$ year.	Both the tibiæ curved; terminals enlarged; spleen and liver palpable; noisy breathing; rhonchi and râles general; deficient resonance of left base.	Bad attack of bronchitis when 8 weeks old; subject to colds since; measles and bronchitis 4 months ago.
7	$1\frac{5}{12}$ year.	Chest transversely constricted; breath sounds noisy, but no râles; abdomen prominent; tibiæ curved; spleen not enlarged; body well nourished.	Bronchial attack about 6 months ago.
8	$1\frac{3}{4}$ year.	Tibiæ curved forward; deficient resonance at both bases; chest full of coarse rhonchi and râles.	Bronchitis when 12 months old; subject to colds since; no other illness.

No. of Case.	Age.	Present conditions.	Precedent cause.
9	$1\frac{5}{12}$ year.	Tlbiæ curved; chest full of râles; submaxillary glands large.	Bronchitis when between 3 and 4 weeks old; subject to it since.
10	14 months.	General rickets well marked.	Cough from birth, caught from the mother.
11	18 months.	General rickets well marked: chest transversely constricted, and full of râles and rhonchi.	Frequent attacks of bronchitis since 6 months old.
12	20 months.	Tibiæ curved; cannot walk now; did so 3 months ago; spleen and liver not enlarged; body well nourished.	Bronchitis when 12 months old.
13	22 months.	Chest transversely constricted; all the curves of the bones greatly increased; no râles in chest.	Cough at birth; measles and broncho-pneumonia 6 months ago, in winter.
14	$2\frac{1}{4}$ years.	General rickets well marked.	Whooping-cough when 12 months old; began to walk early, and then "went off his feet."
15	12 months.	Dorsal curvature; nystagmus.	Bronchitis since 3 months old.
16	$1\frac{2}{3}$ year.	Râles general.	Measles 8 months ago, in January, and congestion of the lungs.
17	$1\frac{1}{3}$ year.	Legs much bent.	Last winter severe bronchitis.
18	12 months.	Back curved.	Bronchitis when 3 months old; never well since.
19	$1\frac{11}{12}$ year.	Chest flat; arms and legs bent slightly; crepitation behind general.	Bronchitis from 3 months old; severely then and repeatedly since.
20	2 years.	Paralysis of right leg; general rickets.	Bronchitis when 12 months old, severely.
21	$1\frac{5}{12}$ year.	Wrists and legs, &c., rickety; abdomen swollen.	"Hacking cough from birth."
22	$2\frac{2}{12}$ year.	General and extreme rickets.	"Bronchitis from so early that he seemed born with it," and frequently since; the mother had bronchitis severely before confinement.

No. of Case.	Age.	Present conditions.	Precedent cause.
23	11 months.	General slight symptoms.	Bronchitis 2 months ago.
24	$2\frac{3}{4}$ years.	"Knock-kneed."	"Little touch of bronchitis when 5 months old."
25	$3\frac{1}{2}$ years.	All over chest rhonchi and râles; convulsions; left leg curved.	Bronchitis when 12 months old very badly, and now again.
26	$1\frac{10}{12}$ years.	Generally rickety.	Well till 10 months old, then whooping cough badly and bronchitis; had "a kind of bronchitis" since birth.
27	2 years.	Generally rickety.	Bronchitis at $3\frac{1}{2}$ months old, badly.
28	$1\frac{1}{2}$ year.	A well-marked case of knock-knee and general rickets.	"Cough for several months."
29	$2\frac{1}{4}$ years.	General bronchitis and rickets.	Bronchitis 4 months ago; still present.
30	$1\frac{7}{12}$ year.	General rickets.	Whooping-cough 12 months ago; measles 3 months ago, and bronchitis.
31	$3\frac{1}{3}$ years.	Well-marked rickets; general crepitation.	Measles at birth; bronchitis when 9 months old; has never lost it.
32	$1\frac{3}{4}$ year.	Well-marked rickets.	"Bronchitis almost from birth."
33	$2\frac{10}{12}$ years.	Râles all over chest and back.	Whooping-cough when 8 to 9 months old; bronchitis followed and continued many months.
34	$2\frac{1}{3}$ years.	Bad rickets.	"Cough off and on for 12 months."
35	$1\frac{1}{12}$ year.	Well-marked rickets; general bronchitis.	Bad cough from birth; no cause except the mother having a cough.
36	9 months.	Rhonchi and râles general.	"Bronchitis some weeks ago."
37	$1\frac{5}{12}$ year.	General rickets.	Bronchitis from birth.
38	10 months.	General rickets.	Bronchitis from birth.
39	$2\frac{3}{12}$ years.	One of twins; the other dead; very rickety; crepitant râles general.	"Had bronchitis from time of birth (the other child died of bronchitis); the older she grew the worse she was."

No. of Case.	Age.	Present condition.	Precedent cause.
40	$1\frac{1}{2}$ year.	Legs and back bent.	Bronchitis since birth ; a fit 10 days ago.
41	2 years.	No decided signs of congestion or bronchitis at present.	"Nothing particular except a little bronchitis ;" has never walked.
42	$2\frac{1}{2}$ years.	General rickets well marked.	Bronchitis began (in October) between 7 and 8 months ago, and continued all the winter ; "congestion of the lungs in February."
43	3 years.	Rhonchi general; well-marked rickets.	Had bronchitis last winter ; mother states it was so slight as "not to deserve notice."
44	1 year.	Back curved.	"Cough ever since birth."
45	$1\frac{5}{12}$ year.	Very marked rickets.	"Ill at 11 months from dentition ; a little cough ever since."
46	$1\frac{10}{12}$ year.	Five other children all rickety; all of them have had coughs, "they are born with them." The mother is phthisical.	Had bonchitis from birth.
47	12 months.	Well-marked rickets.	"Had bronchitis from birth.'
48	2 years.	Joints much swollen ; body wasted ; thorax very small.	Been ill for 9 to 10 months from cough ; had croup when 6 months old.
49	$2\frac{3}{4}$ years.	Fine child at birth ; began to waste at 9 months; has consolidation of right lower lung; there is not much cough or sign of serious trouble.	Dentition at 9 months said to be the cause.
50	$1\frac{1}{12}$ year.	No distinct sign now of bronchitis.	Had acute bronchitis when 6 months old ; never strong since.

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